

```

EEEEEEEEEEEEEEEE RRRRRRRRRRR RRRRRRRRRRR FFFFFFFF FFFFFFFF MMM MMM TTTTTTTTTTTTTT
EEEEEEEEEEEEEEEE RRRRRRRRRRR RRRRRRRRRRR FFFFFFFF FFFFFFFF MMM MMM TTTTTTTTTTTTTT
EEEEEEEEEEEEEEEE RRRRRRRRRRR RRRRRRRRRRR FFFFFFFF FFFFFFFF MMM MMM TTTTTTTTTTTTTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEEEEEEEEEEEEEEE RRRRRRRRRRR RRRRRRRRRRR FFFFFFFF FFFFFFFF MMM MMM TTT
EEEEEEEEEEEEEEEE RRRRRRRRRRR RRRRRRRRRRR FFFFFFFF FFFFFFFF MMM MMM TTT
EEEEEEEEEEEEEEEE RRRRRRRRRRR RRRRRRRRRRR FFFFFFFF FFFFFFFF MMM MMM TTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEEEEEEEEEEEEEEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEEEEEEEEEEEEEEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT
EEEEEEEEEEEEEEEE RRR RRR RRR RRR RRR FFF FFF MMMMMM MMMMMM TTT

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EEEEEEEEEE RRRRRRRR RRRRRRRR DDDDDDDD EEEEEEEEEE FFFFFFFFFF
EEEEEEEEEE RRRRRRRR RRRRRRRR DDDDDDDD EEEEEEEEEE FFFFFFFFFF
EE          RR          RR          RR          DD          DD          EE          FF
EE          RR          RR          RR          DD          DD          EE          FF
EE          RR          RR          RR          DD          DD          EE          FF
EE          RR          RR          RR          DD          DD          EE          FF
EEEEEEEEEE RRRRRRRR RRRRRRRR DD          DD          EEEEEEEEE FFFFFFFF
EEEEEEEEEE RRRRRRRR RRRRRRRR DD          DD          EEEEEEEEE FFFFFFFF
EE          RR  RR          RR  RR          DD          DD          EE          FF
EE          RR  RR          RR  RR          DD          DD          EE          FF
EE          RR          RR          RR          DD          DD          EE          FF
EE          RR          RR          RR          DD          DD          EE          FF
EEEEEEEEEE RR          RR          RR          RR          DDDDDDDD EEEEEEEEE FFFFFFFF
EEEEEEEEEE RR          RR          RR          RR          DDDDDDDD EEEEEEEEE FFFFFFFF

```

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....
....
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....

```

```

MM          MM          DDDDDDDD LL
MM          MM          DDDDDDDD LL
MMMM        MMMM        DD          DD LL
MMMM        MMMM        DD          DD LL
MM          MM          DD          DD LL
MM          MM          DD          DD LL
MM          MM          DD          DD LL
MM          MM          DD          DD LL
MM          MM          DD          DD LL
MM          MM          DD          DD LL
MM          MM          DD          DD LL
MM          MM          DDDDDDDD LLLLLLLLLL
MM          MM          DDDDDDDD LLLLLLLLLL

```

ERROR LOG FORMAT PROGRAM OUTPUT MESSAGES

Version 'V04-000'

```

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***** CAUTION *****

```

ALL OF THE ERFxxDEF STRUCTURES ASSUME THAT THE HEADER IS
EXACTLY FOUR LONGWORD IN LENGTH. IF THIS FIELD CHANGES,
IF EFFECTS ALL OF THE OTHER STRUCTURES. THAT IS TO SAY
ALL MESSAGES HAVE TYPE, TIME, AND ERROR SEQUENCE IN THE
SAME RELATIVE LOCATIONS.

```

ERROR MESSAGE HEADER

\$STRUCT ERF,HDDEF

```

F      HD_SID,L           ; SYSTEM ID #
F      HD_ENTRY,W        ; ENTRY TYPE
S      HD_DCLASS,,B      ; DEVICE CLASS
V      <M
      HD_TYPE,7          ; THE TYPE IS 7 BITS
      HD_INVALID         ; THE INVALID FLAG
      >
S      HD_DTYPE,,B       ; DEVICE TYPE
F      HD_TIME,Q         ; TIME IN 64 BIT FORMAT
F      HD_ERRSEQ,W       ; NEXT UNIVERSAL ERR SEQ #
L      HD_LENGTH        ; LENGTH OF HEADER
E

```

BUGCHECK ERROR MESSAGE BUFFER FORMAT (SYSTEM AND USER)

```

$STRUCT ERF,BCDEF          :BUG CHECK ENTRY FORMAT
F          ,L,4            :ALLOW SPACE FOR THE HEADER
F          BC_KSP,L        :KERNEL STACK POINTER
F          BC_ESP,L        :EXECUTIVE STACK POINTER
F          BC_SSP,L        :SUPERVISOR STACK POINTER
F          BC_USP,L        :USER STACK POINTER
F          BC_ISP,L        :INTERRUPT STACK POINTER
F          BC_R0,L         :REGISTER R0
F          BC_R1,L         :REGISTER R1
F          BC_R2,L         :REGISTER R2
F          BC_R3,L         :REGISTER R3
F          BC_R4,L         :REGISTER R4
F          BC_R5,L         :REGISTER R5
F          BC_R6,L         :REGISTER R6
F          BC_R7,L         :REGISTER R7
F          BC_R8,L         :REGISTER R8
F          BC_R9,L         :REGISTER R9
F          BC_R10,L        :REGISTER R10
F          BC_R11,L        :REGISTER R11
F          BC_AP,L         :ARGUMENT POINTER
F          BC_FP,L         :FRAME POINTER
F          BC_SP,L         :CURRENT STACK POINTER
F          BC_PC,L         :PROGRAM COUNTER
F          BC_PSL,L        :PROCESSOR STATUS
F          BC_CODE,L       :BUGCHECK CODE
F          BC_PCBSZ,W      :SIZE OF PCB IN BYTES
L          BC_LENGTH       :SIZE OF FIXED PART OF BUGCHECK MESSAGE
E          BC_PCB,B        :START OF SOFTWARE PCB
E

```

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4E45
5045
50

```

...
: CRASH-RESTART ERROR MESSAGE BUFFER FORMAT
...

```

```

$STRUCT ERF,CRDEF         :CRASH RESTART RECORD FORMAT
F          ,L,4            :ALLOW SPACE FOR THE HEADER
F          CR_KSP,L        :KERNEL STACK POINTER
F          CR_ESP,L        :EXECUTIVE STACK POINTER
F          CR_SSP,L        :SUPERVISOR STACK POINTER
F          CR_USP,L        :USER STACK POINTER
F          CR_ISP,L        :INTERRUPT STACK POINTER
F          CR_R0,L         :REGISTER R0
F          CR_R1,L         :REGISTER R1
F          CR_R2,L         :REGISTER R2
F          CR_R3,L         :REGISTER R3
F          CR_R4,L         :REGISTER R4
F          CR_R5,L         :REGISTER R5
F          CR_R6,L         :REGISTER R6
F          CR_R7,L         :REGISTER R7
F          CR_R8,L         :REGISTER R8
F          CR_R9,L         :REGISTER R9
F          CR_R10,L        :REGISTER R10
F          CR_R11,L        :REGISTER R11

```

47

```

F      CR_AP,L      :ARGUMENT POINTER
F      CR_FP,L      :FRAME POINTER
F      CR_SP,L      :CURRENT STACK POINTER
F      CR_PC,L      :PROGRAM COUNTER
F      CR_PSL,L     :PROCESSOR STATUS
F      CR_POBR,L    :PROGRAM REGION BASE REGISTER
F      CR_POLR,L    :PROGRAM REGION LIMIT REGISTER
F      CR_P1BR,L    :CONTROL REGION BASE REGISTER
F      CR_P1LR,L    :CONTROL REGION LIMIT REGISTER
F      CR_SBR,L     :SYSTEM BASE REGISTER
F      CR_SLR,L     :SYSTEM LIMIT REGISTER
F      CR_PCBB,L    :PROCESS CONTROL BLOCK BASE REGISTER
F      CR_SCBB,L    :SYSTEM CONTROL BLOCK BASE REGISTER
F      CR_ASTLVL,L  :AST DELIVERY LEVEL REGISTER
F      CR_SISR,L    :SOFTWARE INTERRUPT SUMMARY REGISTER
F      CR_ICCS,L    :INTERVAL TIMER CONTROL STATUS REGISTER
F      CR_ICR,L     :INTERVAL COUNT REGISTER
F      CR_TODR,L   :TIME OF DAY REGISTER
F      CR_ACCS,L    :ACCELERATOR CONTROL REGISTER
F      CR_SBIFS,L   :SBI FAULT STATUS REGISTER
F      CR_SBISC,L   :SBI COMPARATOR REGISTER
F      CR_SBIMT,L   :SBI MAINTENANCE REGISTER
F      CR_SBIER,L   :SBI ERROR REGISTER
F      CR_SBITA,L   :SBI TIMEOUT ADDRESS REGISTER
F      CR_SBIS,L,16 :SBI SILO REGISTER
F      CR_CODE,L    :BUGCHECK/CRASH CODE
F      CR_PCBSZ,W   :SIZE OF PCB IN BYTES
L      CR_LENGTH    :SIZE OF FIXED PART OF BUGCHECK MESSAGE
E

```

```

:
: DEVICE ERROR MESSAGE BUFFER FORMAT (ERROR AND TIMEOUT)
:

```

```

$STRUCT ERF,DVDEF      :DEVICE ERROR RECORD FORMAT

F      ,L,4          :ALLOW SPACE FOR THE HEADER
F      DV_ERTCNT,B   :REMAINING NUMBER OF ERROR RETRIES
F      DV_ERTMAX,B   :MAXIMUM NUMBER OF ERROR RETRIES
F      DV_IOSB,Q     :FINAL I/O STATUS
F      DV_DEVS,S,W   :FINAL DEVICE STATUS
F      DV_CLASS,B    :DEVICE CLASS
F      DV_TYPE,B     :DEVICE TYPE
F      DV_RQPID,L    :REQUESTER PROCESS ID
F      DV_BOFF,W     :BYTE OFFSET IN PAGE
F      DV_BCNT,W     :TRANSFER BYTE COUNT
F      DV_MEDIA,L    :STARTING MEDIA ADDRESS
F      DV_UNIT,W     :PHYSICAL UNIT NUMBER
F      DV_ERRCNT,W   :UNIT ERROR COUNT
F      DV_OPcnt,L    :UNIT OPERATION COUNT
F      DV_OWNUIC,L   :VOLUME OWNER UIC
F      DV_CHAR,L     :DEVICE CHARACTERISTICS
F      DV_SLAVE,B    :SLAVE CONTROLLER NUMBER
F      ,B,1          :SPARE UNUSED BYTES
F      DV_FUNC,W     :I/O FUNCTION VALUE
F      DV_NAME,T,16 :DEVICE NAME

```

```

F      DV_REGSAV,L      ;START OF REGISTER SAVE AREA
E

```

```

:
: TIME STAMP MSG FORMAT
:

```

```

$STRUCT ERF,TSDEF      ;TIME STAMP RECORD FORMAT
F      ,L,4            ;ALLOW SPACE FOR THE HEADER
L      TS_LENGTH       ;LENGTH OF TIME STAMP MSG
E

```

```

:
: SYSTEM SERVICE MESSAGE
:

```

```

NOTE:  SYSTEM SERVICE MESSAGE COVERS:

```

- 1) THE MESSAGES FROM THE SERVICE
- 2) OPERATOR MESSAGES
- 3) NETWORK MESSAGES

```

ONLY THE TYPE FIELD IS DIFERENT

```

```

$STRUCT ERF,SSDEF      ;SYSTEM SERVICE RECORD FORMAT
F      ,L,4            ;ALLOW SPACE FOR THE HEADER
F      SS_MSGSZ,W      ;MESSAGE TEXT SIZE IN BYTES
L      SS_LENGTH       ;LENGTH OF CONSTANT PART
F      SS_MSGTXT,B     ;FIRST BYTE OF MESSAGE TEXT
E

```

```

:
: VOLUME MOUNT/DISMOUNT MESSAGE TYPE
:

```

```

$STRUCT ERF,VMDEF      ;VOLUME MOUNT RECORD FORMAT
F      ,L,4            ;ALLOW SPACE FOR THE HEADER
F      VM_OWNUIC,L     ;OWNER UIC OF THE VOLUME
F      VM_ERRCNT,L     ;UNIT ERROR COUNT FROM UCB
F      VM_OPRCNT,L     ;UNIT OPERATION COUNT FROM UCB
F      VM_UNIT,W       ;DEVICE UNIT NUMBER
F      VM_NAMLANG,B    ;LENGTH OF DEVICE GENERIC NAME
F      VM_NAMTXT,T,15  ;DEVICE GENERIC NAME
F      VM_VOLNUM,W     ;VOLUME NUMBER WITHIN SET
F      VM_NUMSET,W     ;NUMBER OF VOLUMES WITHIN SET
F      VM_LABEL,T,12   ;VOLUME LABEL
E

```

```

:
: SYSTEM STARTUP MESSAGE
:

```

```

$STRUCT ERF,SUDEF      ;SYSTEM UP MESSAGE BUFFER
F      ,L,4            ;ALLOW SPACE FOR THE HEADER

```

```

F      SU_DAYTIM,L      ;CONTENTS OF TIME OF DAY CLOCK
L      SU_LENGTH       ;LENGTH OF MESSAGE
E

```

```

:
: MACHINE CHECK LOG BUFFER FORMAT
:

```

```

$STRUCT ERF,MCDEF

F      .L,4             ;ALLOW SPACE FOR THE HEADER
F      MC_SUMCOD,B      ;SUMMARY CODE
F      MC_TOPF,B        ;TIME OUT PENDING FLAG
F      MC_OPCODE,B      ;OPCODE OF INSTRUCTION CAUSING CHECK
F      MC_UNUSED,B      ;UNUSED
F      MC_CES,L         ;CPU ERROR STATUS
F      MC_UPC,L         ;MICRO-PC AT FAULT TIME
F      MC_VA,L          ;VIRTUAL ADDRESS AT FAULT TIME
F      MC_D,L           ;CPU D REGISTER AT FAULT TIME
F      MC_TBER0,L       ;TRANSLATION BUFFER STATUS REG 0
F      MC_TBER1,L       ;TRANSLATION BUFFER STATUS REG 1
F      MC_TMOAD,L       ;PHYSICAL ADDRESS CAUSING SBI TIMEOUT
F      MC_PARITY,L      ;CACHE STATUS REGISTER
F      MC_SBIERR,L      ;SBI ERROR REGISTER
F      MC_PC,L          ;PC OF INSTRUCTION CAUSING CHECK
F      MC_PSL,L         ;PSL OF MACHINE AT FAULT TIME
L      MC_LENGTH        ;LENGTH OF MACHINE CHECK FRAME
E

```

```

:
: SOFT ECC DETECTED ERRORS AND SBI ALERT BUFFER FORMAT
:

```

```

$STRUCT ERF,SEDEF

F      .L,4             ;ALLOW SPACE FOR THE HEADER
F      SE_NUMCON,L      ;NUMBER OF MEMORY CONTROLLERS
L      SE_LENGTH        ;LENGTH OF FIXED PART OF MSG
F      SE_TR,L          ;ADAPTOR TR NUMBER
F      SE_A,L           ;MEMORY REGISTER A
F      SE_B,L           ;MEMORY REGISTER B
F      SE_C,L           ;MEMORY REGISTER C
F      SE_PC,L          ;PC OF INSTRUCTION AT FAULT TIME
F      SE_PSL,L         ;PSL OF MACHINE AT FAULT TIME
E

```

```

:
: SBI FAULT BUFFER FORMAT AND ASYNCHRONOUS WRITE ERROR FORMAT
:

```

```

$STRUCT ERF,SBDEF

F      .L,4             ;ALLOW SPACE FOR THE HEADER
F      SB_FAULT,L       ;SBI FAULT/STATUS REGISTER
F      SB_SILCMP,L      ;SBI SILO COMPARATOR

```

F	SB_MAINT,L	:SBI MAINTENANCE
F	SB_ERROR,L	:SBI ERROR REG
F	SB_TIMEOUT,L	:SBI TIMEOUT REG
F	SB_SILO,L,16	:SBI SILO REG
F	SB_SIRGS,L,16	:REGISTER A'S ON BUS (OR 0)
F	SB_PC,L	:PC OF INSTRUCTION AT FAULT TIME
F	SB_PSL,L	:PSL OF MACHINE AT FAULT TIME
L	SB_LENGTH	:LENGTH OF SBI ERROR BUFFER
E		:

